U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-260 288

STREAM RENEWAL - A CONCEPT

PUBLIC HEALTH SERVICE
WASHINGTON, D. C.

PREPARED FOR
PITTSBURGH UNIVERSITY
PENNSYLVANIA

7 NOVEMBER 1963

002145

257036

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service

Division of Water Supply and Pollution Control
Washington, D.C. 20201

PB 260 288

2/25/64

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Presented at the Fifth Pittsburgh Sanitary Engineering Conference, November 7, 1963, University of Pittsburgh, Pittsburgh, Pennsylvania.

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NATIONAL TECHNICAL
INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

BIBLIOGRAPHIC DATA SHEET	1. Report No.	2.	3. Recipient's Accession No. PB-260 288
4. Title and Subtitle Stream Renewal - A Concept			5. Report Date 7 Nov 63 6.
7. Author(s) Leonard B. Dworsky			8. Performing Organization Rept. No.
9. Performing Organization Name and Address Public Health Service, Washington, D. C. Div. of Water Supply and Pollution Control			10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address			13. Type of Report & Period Covered 14.

15. Supplementary Notes Presented at the Pittsburgh Sanitary Engineering Conference (5th), Held at Pittsburgh, Pennsylvania on November 7, 1963. Sponsored in part by Pittsburgh Univ., Pa. Graduate School of Public Health.

16. Abstracts

The concept of stream renewal is addressed in view of the historical development in the United States of declining water quality and increasing attempts to improve it. General types of water quality management programs are reviewed, including: water pollution control; recreation; watershed programs; flood and other land zoning; and the idea of "America the Beautiful." The stream renewal concept is concluded to hold promise of beautification and greater values for Americans.

17. Key Words and Document Analysis. 17a. Descriptors

17b. Identifiers/Open-Ended Terms

*Stream flow
*Water reclamation
Water quality
Watersheds
United States
*Water pollution control
Flood routing
Floods
Land use zoning
Social effect
Water supply

17c. COSATI Field/Group 13B

18. Availability Statement	19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 13
	20. Security Class (This Page UNCLASSIFIED	22. Price

FORM NTIS-35 (REV. 10-73) ENDORSED BY ANSI AND UNESCO. THIS FORM MAY BE REPRODUCED USCOMM-DC 8265-P74

STREAM RENEWAL—A CONCEPT

by
Leonard B. Dworsky

This, the Fifth Sanitary Engineering Conference, under the auspices of the Graduate School of Public Health, University of Pittsburgh, has introduced a new concept in the term "stream renewal." It is proper that new concepts be conceived, framed, and articulated under the sponsorship of universities. It gives meaning and purpose to a fundamental role of universities to produce the reasoning and intellectual basis to guide society's actions.

I bear a responsibility, as your keynote speaker, to define this concept and its boundary limits. Others will deal in depth with many of its parts.

From the viewpoint of Ecclesiastes, that "there is nothing new under the sun," it would not be fair to call stream renewal a new concept. Rather it is an application of a concept widely adopted by the nation, its states and cities in programs of urban renewal. Yet the synthesis of known and accepted attitudes and devices properly can be labeled new if in the end a new dimension is added to our thinking, and if resulting operational shifts produce gains in social values, efficiency and economy.

"Stream renewal" may or may not be a central theme for action programs. Some valid reasons can be stated why certain programs contributing to the "stream renewal" concept should be the focus of action. Good logic otherwise points to a more inclusive arrangement. It is with this understanding that "stream renewal" is used as the central theme of this conference.

For more than a century, while most of our cities were just beginning to stir, the nation's rivers, lakes, and bays were allowed to depreciate into polluted water "slums." The past third of a century has seen increasing efforts to stay this situation and to recover some of the lost ground.

Comparably, the nation's major effort to turn the tide on city slums begin in the early 1930's. The comprehensive effort, however, began with passage of the Housing Act in 1949 (P.L. 171, 81st Congress), one year after the passage of the first Federal Water Pollution Control Act in 1948. (P.L. 845, 80th Congress).

Today there is no doubt that we are making headway in cleaning slums, both in the cities and in our waterways. Accomplishments in the City of Pittsburgh and the gains made in restoring the Ohio River to a more useful condition evidence this trend. Notwithstanding this progress, a major question remains: Are we making enough progress, and for what purposes?

The original slum clearance and low cost public housing programs of the 1930's have been supplemented today by new and important goals. Thomas F. Johnson and co-authors, in a recent book, Renewing America's Cities, state: "Beyond these various goals, urban renewal is regarded by some as a means of creating what is sometimes characterized as the city beautiful. Our cities long have been indicted by many observers as unplanned and haphazard in their growth, and as ugly and unattractive to the eye. Many persons view the urban renewal program as an opportunity to remake our cities into clean, well-planned, and aesthetically appealing places to work, live and play. Supporters of this type of program generally picture a renewed city of broad boulevards, artistically landscaped parks, modern new structures, free-flowing traffic, and families who

occupy charming garden apartments. Creating beautiful cities has become for many an important objective of urban renewal."

Does "the river beautiful" with its attendant meaning give us a new set of goals for which to strive? If "the city beautiful" is a national goal--and it clearly is--can our goal for the nation's waters be less? I submit that the concept of "stream renewal," used in the same sense as "urban renewal" constitutes a major goal for water and related land planners and developers, especially those concerned with water pollution control.

The need for such a goal stems from the difficult-to-visualize, but nonetheless real, growth and changing cultural patterns of our society.

A net addition of more than three million people each year; a doubling of industrial production over the next 10 years; the likelihood that over 75 percent of our people will be living in metropolitan centers and over 90 percent in cities and towns are important factors.

Changes in family economic and social status are also creating pressing demands on our water resources in new and different ways. Three times as many families in 1961 earned over $10,000 as in 1950, with commensurate increases in the lower income groups. Discretionary spending power--income over and above that needed for the basic necessities of food, clothing, and shelter--has risen nearly 100 percent since 1950. By 1974 it could reach $405 billion, another 95 percent increase. And leisure time for home, travel, and recreation has more than doubled. Paid vacation time jumped from 34.4 million weeks in 1946 to 77.7 million weeks in 1959. Visitors to our national parks quadrupled from 21.8 million in 1946 to 88.5 million in 1962.

Such shifts in income and leisure time will continue to change our pattern of living. The change will have its impact on recreation, particularly that which is water-based. Add to these forces the continuing revolution in science and technology, and it becomes mandatory that we set new and commensurate goals for using our water resources.

"Stream renewal," if it is to respond to the challenges posed by these changes, must center on the control of pollution to insure that all available water is usable. In addition, "stream renewal" will demand a strong planning and control effort for the land which influences or is influenced significantly by the stream or waterway. We tend to overlook the land's relationship to water resource development. For example, the Corps of Engineers, in carrying out its flood control responsibilities, is essentially a land planning agency with a primary mission to protect urban and rural land from devastating floods. The Bureau of Reclamation has as its principal function the reclaiming of lands. The Department of Agriculture's watershed programs are aimed at preventing lands from eroding and, through various devices, to stay water where it falls to benefit the land.

Water quality management by river basins has been and continues to be concerned primarily with preventing deterioration and pollution of waters in their channels, or with the enhancement of the water quality. I suggest that it is equally important today for water quality management to plan for the effect that water quality will have on the land. Moreover, a major consideration of the program must be the effect that land planning agents will have on the water plan.

Of necessity, land planners have had to proceed in their development programs without benefit of a corollary water quality management plan. Thus,

land planning has had little guidance and few, if any, constraints from the viewpoint of water quality management. Such guidance would be highly valuable in locating urban and suburban populations and their water-based recreation facilities, in suggesting locations for industrial parks, in developing transportation plans, zoning programs, and in other purposes.

Thus, water quality management must be concerned with both water and land. The land planning phase of water quality management calls for development of a tight framework within which this task can proceed with no overlap of responsibilities with the land planning agencies.

The land planning agencies, too, are in need of a soundly based water and land-related water quality management plan. Such a plan could guide their land-water relations, just as they will guide, support, and constrain the water quality management planners in their water-land relationships. Each set of plans will have mutual impact on the other and do much to facilitate the aims of both land and water quality management planning agencies.

"Stream renewal" is a potentially realizable goal. Many of its components exist today in separate programs of considerable strength. However, as in many of our water resource development efforts, the nation can gain greater benefits from improved planning and coordination, including a periodic restatement of concepts to meet new needs. Let us examine some of the component programs and ethics including: (1) water pollution control, (2) recreation, (3) watershed programs, (4) flood plain and other land zoning, and (5) the idea of "America the Beautiful."

Water Pollution Control: President Kennedy, referring to water resources in his conservation message to Congress in 1962 said, "Our goal,

therefore, is to have sufficient water sufficiently clean in the right place at the right time to serve the range of human and industrial needs."

This implies a strong water pollution control program aimed not merely at preventing water pollution but enhancing water quality. In addition, the Senate Select Committee on National Water Resources and Congressional Committee reports dealing with pollution control legislation have indicated the need to consider water resource development in relation to the high demands that will be placed upon the nation's water resources between now and the year 2,000, and beyond. Implicit in these recommendations are:

a. That water resource projects be developed to a high scale (i.e., towards the maximum) to make best use of the limited number of reservoir sites;

b. That water developments be based on anticipated future water requirements; and

c. That unless properly planned for, water quality will be the limiting factor in the availability and use of the nation's water resources.

Prudent planning would take the latter point to mean that the nation's future economic, social and national defense posture should not be geared to minimum quality levels. On the contrary, prudent planning would assume that highest possible quality levels should be sought in order to provide not only those economic and social values that would result from placing the nation's water resources in a position of having high quality, but from the standpoint of providing a cushion against indeterminate future situations.

Recreation: The Outdoor Recreation Resources Review Commission has documented well America's need and demand for outdoor recreation.

The most important conclusion to be drawn from the exhaustive study is that official recognition has now been given to recreation as a subject of importance not merely to the individual, his family, and the local community, but in the highest councils of our society--both State and Federal. It means that recreation is recognized officially in the American economy; that plans and programs for outdoor recreation will be properly funded and pursued vigorously.

The new Bureau of Outdoor Recreation in the Department of Interior will lead this expanding effort. The Open Space Land Program of the Housing and Home Finance Agency will have equal impact. Title VII of the Housing Act of 1961 authorizes grants of up to 30 percent of cost for acquiring open space in urban areas. President Kennedy, in his housing message of March 1961, stated that "open-space must be reserved to provide parks and recreation, conserve water and other natural resources, prevent building in undesirable locations, prevent erosion and floods, and avoid the wasteful extension of public services."

In its first two years, the Open-Space Land Program made 114 grants amounting to nearly $18 million to applicants in 27 states to acquire 55,000 acres of urban lands. Grants were for such purposes as conserving stream valley lands along the Passaic River in Morris County, New Jersey; developing a San Francisco Bay water-front park by the City of San Leandro, California; and acquiring Maryland lands for their watershed value to the D.C. Metropolitan area.

Most outdoor recreation is associated with water. Increasingly this will be a most important stimulus for cleaning waters through water quality management programs. The high quality requirements of water-based recreation

challenge to the utmost our existing waste treatment technology and forecast increasing pressure for all-out research seeking new waste treatment techniques.

While urban Americans prefer rural outdoor recreation, practical considerations require intensive programs to convert for recreational use potential facilities close to metropolitan centers. The metropolitan community serves not only as a cultural and recreation center, but as the central receiver of regional resources which its industries transform into marketable products. In these divergent roles the community will produce concomitant wastes which will intensify as outdoor recreation programs advance. Water quality managers will feel the impact and be faced with greater and more difficult challenges.

Flood Plain and Other Land Zoning: The "stream renewal" concept receives strong support from state and local flood plain and other land zoning and control programs.

Flood plain zoning offers opportunities to transform and improve the lands involved for the general benefit of the community, urban or rural. Such zoning can contribute to open-space development; promote recreational lands along waterways; and restrict unsightly, obsolete and damage-prone construction.

Land zoning practices extend well beyond the usual nuisance and district zoning of cities and towns. Today zoning often controls the location of industry, both within the city and in the fringe and rural area; and industrial parks, often on a waterway, are developed in consonance within the environmental setting. Forestry and recreational zoning contributes improved recreational attractions. Watershed zoning districts can reserve

mountainous and hilly land for water production, forestry, wildlife and recreation and guard such lands from fire, erosion, pollution, and scenic despoilment. Zoning for conservation, open space, and to protect historic monuments is relatively new and can contribute importantly to "stream renewal" programs.

States, in their control over state lands, through state planning, or by legislative action, can guide local, district, and regional land planning and zoning agencies. Similarly, local government exercises control over its land under the police power, public health regulations, water controls, and land planning and zoning regulations. Here indeed are powerful tools to help satisfy the emerging demands for water-based recreation, open lands, industrial sites or parks, urban development and the impact of these on transportation, communication, and water and sewer services, as well as urban flood control and drainage.

America the Beautiful: Numerous programs today aim at improving American life by making America beautiful. The four programs which I have discussed can contribute to the "Keep America Beautiful" concept. They provide opportunities to gain greater values than ever before from the nation's waterways and related lands. This type of slogan awakens the public to values which the American people cherish and which, given the opportunity, education, and time, can be successfully achieved. Law, regulation, education, and facilities have in the past decade improved the litter problem in many places on the land. This effort is still needed in connection with our streams. Simple good housekeeping applied to cans, car chassis, dumps and to weedy and obnoxious areas can significantly contribute to "stream renewal." Organization, education, and dedication are keystones in this venture.

Program Opportunities: The "stream renewal" concept holds promise of beautification and greater values for our people as we strive together for a better life. The nation's waterways have been a valued resource since earliest days and are still highly important for economic, public health, and cultural reasons.

"Stream renewal" as a concept does not necessarily require new organization to bring it into being. If the general idea is acceptable, the several programs now existing can contribute much toward its implementation. States and localities have power and authority to employ many facets of "stream renewal." State planning can give a major boost to making waterways useful, clean, and beautiful in the same way that cities are formulating and carrying out plans for urban renewal. Federal agencies, through interagency committees or river basin commissions, working closely with states and metropolitan areas, can focus many ongoing programs on "stream renewal." Finally, and perhaps most important, citizen watershed associations can do much to bring together the many presently uncoordinated program efforts bearing on "stream renewal."

Financial and technical assistance from the many programs in existence can be used to carry out a rounded "stream renewal" program. Grants to cities, towns, and districts for sewage treatment works are available from the federal and several of the state governments. Industrial incentives, available from some states, are under study by the federal government to encourage industrial pollution abatement. Open-space land grants, financial assistance for recreational developments, and urban development programs all contribute to the concept.

In time we may view stream renewal in the same light that we now view

urban renewal. If we do, and if we act to conserve water for the many pleasures it can yield, we will have contributed much to the future well-being of the nation.